cannot be relied upon to support the patient for 24 hours. Whenever practicable, the delay of the final step until union has taken place between the stomach and margins of the abdominal opening, is, on the whole, a safe course. On the other hand, some operators prefer immediate completion of the operation. Whether such a rule will be universally adopted, experience only will tell.

When delay is advisable, the plan of transfixing the two outer coats with hare-lip pins, is surely the simplest, and the experience of Macnamara tells us, is all sufficient, but the temptation to render all doubly secure, is very great, and few seem able to resist putting in a few stitches—"They often err in doing too much."

If an immediate gastric opening is demanded, the stomach is first carefully stitched to the abdominal opening, preparatory to the final step, which under such circumstances is exceedingly simple; an incision through its outer and middle coats is made, then the inner coat perforated with a small pair of forceps, by means of which a tube is entered and liquid food injected. When several days have elapsed the entire field is covered by layers of lymph, and some care is requisite not to cut too deeply. In the contracted state of the organ transfixion of both walls might easily occur; hence, I incised layer by layer, until the muscular coat was recognized and cut through, then used the forceps. In either instance a large opening is what must be guarded against. Gerster says one of his cases died of starvation, due to escape of gastric contents.

REPORT OF SIXTEEN CASES OF LAPAROTOMY.[1]

By H. C. DALTON, M. D.,

OF ST. LOUIS,

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THE following is a report of the cases of laparotomy done by me in the St. Louis City Hospital, during the past two years:

[1]Read before the Mississippi Valley Medical Society at St. Louis, Mo., September 26, 1888.

CASE I.—SUPPURATIVE APPENDICITIS; INCISION; REMOVAL OF ULCERATED APPENDIX; RECOVERY.—Frank S., Bohemian, æt. 23, hodcarrier, entered the hospital June 28, 1888, with the following history:

Always enjoyed good health until last winter, when he had an attack of five or six days duration, somewhat similar to, though not so severe as, the present trouble.

Present illness began five days before admission with loss of appetite, pain in abdomen, and diarrhœa. He continued to work for a day and a half in this condition, when intense pain compelled him to cease. The pain and diarrhœa continued until admission to hospital. The day before admission had but one stool, was chilly, and vomited several times; pains became more agonizing, thirst great, which when quenched caused vomiting.

Examination revealed dulness on percussion in right iliac region and some prominence at this point, but no well defined tumor; some tympanites elsewhere over abdomen. The finger, passed into rectum felt a tumor in the right iliac fossa. Copious enemas gave a stool of fair consistence.

At 7 A.M., next day, I operated, assisted by Dr. N. B. Carson and the hospital staff. The incision was about three and a half inches in length, commencing an inch above Poupart's ligament, and extending upward and slightly outward over the most prominent part of the swelling. In cutting through the skin I came upon an indurated mass, which proved to be the thickened wall of the pus cavity. About three ounces of very fœtid pus escaped. After satisfying ourselves that the cavity did not connect with the general peritoneal cavity, we irrigated it with a $^1/_{1000}$ solution of bichloride of mercury. The appendix was found at the bottom of the cavity, half buried in the underlying inflamed tissues, and strongly adherent to same; so much so that it required considerable force to tear it from its bed. Lying just outside of the ulcerated appendix, within the pus cavity, was a hardened fæcal concretion about half an inch in length and one-eighth of an inch thick, which was doubtless the cause of the trouble Large catgut ligature was thrown around the appendix, close to the gut, and the appendix cut off. The specimen is nearly or quite an inch and a half in length by an inch in width and thickness. It is curled upon itself like a pig's tail.

In enlarging the incision in the cavity downward, I cut the deep epigastric artery which bled very profusely, but fortunately I was able to catch it with forceps upon the first attempt. After thoroughly

curetting and washing out the cavity with a hot $^1/_{1000}$ solution of bichloride of mercury, a glass drain tube was put in and the cavity filled with sublimate gauze, in the meshes of which, iodoform had been thoroughly rubbed. The forceps compressing the artery were left *in situ*.

Wound dressed on second day. Tube and forceps removed. Wound found in sweet aseptic condition. It filled up rapidly by aseptic granulation. The temperature was never elevated a degree above the normal. He was discharged well August 31, 1888.

CASE II.—PENETRATING GUNSHOT WOUND OF ABDOMEN; HYDROGEN TEST; ENTERECTOMY; INTESTINAL SUTURE; DEATH.—Tim. M., Irishman, fireman, æt. 29, was shot two hours before admission on July 8, 1888, bullet entering two and a half inches to left of median line and four inches below umbilicus. He was suffering intense pain; temperature 100°; pulse 98; respiration 24. Pain referred to epigastrium. He had been a very hard drinker and was drunk at the time of injury. He vomited very soon after being shot, and made several ineffectual attempts to do so when put upon the operating-table.

After consultation with Drs. McCandless, Lutz, and Meisenbach, I made preparations for laparotomy. We concluded to try Senn's hydrogen gas test, Drs. Meisenbach and Lutz applying it. The experiment was a perfect success—the gas escaped freely through the glass tube in the wound and ignited readily. Median incision six inches in length. Abdomen greatly distended with gas which separated the intestines from the abdominal wall, and when the peritoneum was cut through the gas escaped with a loud report.

Examination revealed fifteen holes in the small intestine. It was considered advisable to make two V-shaped sections, involving both gut and mesentery. The sections were each three inches in length, in one of which there were six holes and in the other five. Besides these there were two other coils perforated, giving four other holes, the latter of which were closed by Lembert sutures, iron-dyed silk being used. As the patient was in a bad way, and time being a great desideratum, we used continuous iron-dyed silk suture to the V-shaped sections. The abdomen was, from time to time, flushed with hot sterilized water, 108° or 110° F. The great number of perforations involved a great length of time for their closure—over three hours. Patient was collapsed and died in an hour after leaving the table.

I think it may justly be claimed that this case was the second in which Senn's method was used. One or two other cases

have been reported, but, I believe they occurred subsequently to mine, which as above stated was on July 8, 1888. Dr. Wm. Mackie, of Milwaukee, was the first to use the method, the report of which occurs in the *Medical News* of June 9, 1888. In my case the method was more successfully demonstrated than in his, for in his case the escaping gas did not ignite. He stated that "on firmly compressing the abdomen there occurred an intermittent escape of gas, mixed with blood, through the wound of entrance," which he said would not ignite because "a burning match never once happened to be directly over the wound of entrance when the gas was escaping."

Without an operation no one would claim that the above case could have recovered. The patient, however, might possibly have gotten well had the operation been performed more rapidly; but those who have not done this operation can hardly conceive the length of time it takes, or the many difficulties one encounters in its performance.

A great deal of time can be saved in making V-shaped sections, by using the method suggested by Dr. H. H. Mudd, reported in the *Journal of the American Medical Association*, August 11, 1888. I can testify to this as I assisted the doctor in a laparotomy for a penetrating stabwound of the abdomen, cutting the intestines, in which he used this method.

Senn's decalcified bone plates or rubber tubes might very greatly shorten the time of the operation.

CASE III.—PENETRATING STABWOUND OF ABDOMEN, STOMACH PROTRUDING; RECOVERY.—Dan. C., colored, æt. 28, fireman, admitted 12:55 A. M. August 17, 1888. Was stabbed three hours before admission. He was in great agony, and greatly depressed; pulse weak and rapid; temperature 99.6° F. The wound was situated two inches below the ensiform cartilage, a little to the left of the median line. It was one inch in length. Two thirds of the stomach protruded. The organ was dark blue, almost black, and covered with dirt, the discoloration being due to its constriction by the narrow wound through which it passed.

Assisted by Dr. A. H. Meisenbach, and the hospital staff, I enlarged the wound sufficiently to replace the stomach, after which he vomited a large amount of blood, showing penetration of the organ. The med-

ian incision was enlarged to perhaps three inches, and the wound of stomach sought for, which proved to be very small, not more than a quarter of an inch on its anterior surface. The probe passed through the serous and muscular coats, but failed to penetrate the cavity. I presume the mucous membrane acted as a valve and prevented its entrance.

There was a small amount of blood in the peritoneal cavity which was mopped out with sponges wrung out in a solution of $^1/_{10000}$ bichloride of mercury. The wound was closed by interrupted silk sutures, each involving the skin, muscles, and peritoneum. It was dressed antiseptically; opened on the eighth day and found healed by first intention. His pulse and temperature never reached 100, except on one afternoon. No drainage tube used. He was nourished by enemas for ten days, nothing allowed by stomach. Discharged well September 6, 1888.

CASE IV.—PENETRATING STABWOUND OF ABDOMEN, OMENTUM PROTRUDING. RECOVERY.—Mortimer J., colored, æt. 30, laborer, admitted 12:55 A. M. August 17, 1888. Was cut three hours before admission. Was suffering considerable pain, but little shock; pulse 98, temperature 101 F. The wound was situated at the intersection of the tenth intercostal space with the left axillary line. It was enlarged, omentum returned, and a small amount of blood sponged from cavity.

The finger introduced came in contact with the kidney and the spleen. Neither organ was injured. Glass drainage tube put in, and the wound packed for two days, after Bergmann's method, when it was redressed and sewed up. Drainage tube replaced by a small rubber tube.

Wound healed by first intention, and patient discharged well September 6, 1888.

This patient had to wait until Case III was attended to, and this may account for the rise of temperature.

CASE V.—INTUSSUSCEPTION; LAPAROTOMY ON THIRD DAY; DEATH.—Armogast G., æt. 42, dairyman, admitted at 8:20 P. M., June 5, 1888. Occupation required him to frequently assume the stooping posture. Two days before admission he was suddenly seized with an acute, agonizing pain in the epigastric region, which came on shortly after supper. An hour or two after he vomited freely. This condition continued periodically until he came to the hospital. Bowels had not moved since inception of illness. His pulse was 78, temperature and respiration normal; complained of intermittent pain in abdomen, and

some tenderness on pressure over epigastrum. An enema brought away a large quantity of hardened feces. A dose of morphine and warm applications relieved pain for the night.

He vomited but once the next day, and there was less pain and tenderness, which was always referred to the epigastrium. His condition remained the same for the next two days; bowels, however, did not move.

On the morning of the third day I found him in great pain; abdomen distended, tympanitic, and quite tender to pressure; pulse rapid; temperature 100°F.; countenance anxious. There was some dulness on percussion in the hypogastric region.

As laparotomy was now the only alternative I concluded to give him that chance. Upon opening the abdomen, median incision, the intestines were found very much discolored and matted together. An intussusception of about two inches was found in ileum about three inches from cæcum. The intussusceptum was gangrenous in two places. The spots were circular in form, parallel to the gut, and each about a half inch in diameter, with a half inch of healthy tissue intervening.

As the patient was too much depressed to stand the resection of the gut, the serous surfaces were brought together over the gangrenous portions by Lambert's suture. I concluded that there would not be too much narrowing after the use of this method. The patient never rallied and died three hours after the operation.

Here was a case which could almost certainly have been saved had an earlier operation been done, but procrastination on my part cost him his life. I was deceived by his fair general condition for a day or two, and I also thought that as his bowels had moved from the enema there might possibly be no obstruction. However, we may have several fecal actions from the lower bowel and still obstruction may exist higher up.

I have reproached myself very much for the result in this case, and the lesson I learn from it is that delays are dangerous, that if we expect to save cases of acute intestinal obstruction, we must open the abdomen, early, find and relieve the obstruction and close the belly as rapidly as possible.

CASE VI.—PENETRATING STABWOUND OF THORAX, DIAPHRAGM, AND

ABDOMEN; HERNIA OF OMENTUM THROUGH DIAPHRAGM; SUTURE OF DIAPHRAGM; RECOVERY.—Peter F., Irish, æt. 22, horse shoer, admitted August 4, 1888. Six hours previously was stabbed in left side, the knife penetrating between the seventh and eighth ribs in the axillary line and passing through the diaphragm. The wound through thoracic wall was about an inch in length, that in the diaphragm about three inches. The lung was not injured; expiration was probably taking place at the time, hence the lung was well up in the thorax and out of the way.

The wound had previously been sewed up at the dispensary, but as the patient was suffering a great deal of pain, I reopened the wound and enlarged it which enabled me to see the omentum protruding through the diaphragm. I was compelled to resect four inches of the seventh rib in order to get sufficient room to replace the omentum, and sew up the wound in the diaphragm. The diaphragmatic wound commenced an inch from the thoracic wall and extended three inches toward the median line. It was very unhandy to sew up owing to its location, and the constant up and down motion of the diaphragm during respiration. It was closed with the heaviest catgut, interrupted, suture. The thoracic cavity was irrigated with warm sterilized water, drainage tube introduced, and the external wound packed for two days with antiseptic gauze. Tube and dressing removed on the third day; wound dressed antiseptically, and healed by aseptic granulation. Patient discharged well August 4, 1888.

CASE VII.—PENETRATIMG WOUND OF THORAX, DIAPHRAGM AND ABDOMEN; SUTURE OF DIAPHRAGM; RECOVERY.—Nettie S., American, æt. 24 years, admitted at 1 A. M., August 5, 1888. Patient jumped from a window a distance of six or eight feet, falling upon a picket fence, picket penetrating left side. Examination revealed a wound two, or two and a half inches in length in left axillary line between the eighth and ninth ribs, through which omentum and three or four inches of small intestines protruded.

The wound, of course, passed through thorax and diaphragm into abdomen. She was drunk at the time of injury.

When admitted had a temperature of 100° F., pulse 110, suffering great pain. After enlarging the wound to three inches a thorough examination failed to discover visceral injury.

After sponging out a large quantity of blood from peritoneal cavity, I sewed up the diaphragm with heavy catgut suture, the ribs being sufficiently separated at this point to allow me to do so. A rubber drainage tube was put in thoracic cavity, and the wound packed with sublimate gauze, on which iodoform had been thickly sprinkled

Her pulse ranged between 115 and 120 for four days, the temperature above 100° for a week, after which time both fell to normal and remained there. As there was a large amount of serous discharge from thoracic cavity, I was not able to sew up the wound until the fourteenth day, when it all healed by first intention except the part occupied by small rubber drainage tube. This was removed within the next three or four days and the wound left healed by aseptic granulations She was discharged well August 27, 1888.

I thought it rather remarkable that the wound should heal by first intention after being left open till the fourteenth day. The term thoraco-laparotomy would, perhaps, be more appropriate in these cases.

CASE VIII.—SUPPURATIVE PERITONITIS FOLLOWING PERFORATING ULCER OF STOMACH; ABSCESS OF LEFT KIDNEY; DEATH.—Henry R., colored, æt. 40 years, laborer, was admitted May 18, 1888. Had suffered seven weeks with gastric disturbances; had chills irregularly, vomited occasionally about an hour after eating, had frequent gastralgia and anorexia. Claimed to have lost sixty pounds of flesh in the seven weeks illness. Bowels alternated between diarrhœa and constipation. For a week before admission bowels were somewhat loose, stools quite dark.

One week after admission at 12:30 A. M. the assistant was called and found patient suffering intense agony. In umbilical region pressure gave great pain. Pulse 110, temperature 102° F. The doctor gave one-fourth of a grain of morphine hypodermically, and five grains antifebrin, per rectum, and applied cold applications. When I saw him next morning, the 27th, there was general peritonitis, abdomen distended, tense and tympanitic, great pain on pressure; vomited bilious matter.

Perforating ulcer of stomach followed by general peritonitis was diagnosticated, and laparotomy determined upon. Assisted by Drs. N. B. Carson, Lutz, Meisenbach, McCandless, *et al*, I made a median incision from ensiform cartilage to umbilicus. When peritoneum was incised a considerable quantity of sero-purulent fluid escaped. The intestines were very much distended. Several small fistulous tracks were found, near together, on lesser curvature of stomach about three inches from pylorus, surrounded by a mass of thickened inflamed tissue. We were unable to pass a probe into stomach through the fistulous tracks.

Being unable to locate the ulcer, and feeling certain that one existed, we deemed it advisable to make a small opening into the organ

which enabled us to see it very plainly. It was situated an inch from the fistulous openings, was circular in form, and about half an inch in diameter. It seemed to involve the mucous membrane and muscular coats only. We failed to discover the perforation. It had doubtless been closed by inflammatory action.

As the patient was now almost moribund, and thinking he would not survive long enough to enable us to excise the ulcer, we deemed it best to finish the operation as rapidly as possible. The wound we had made in stomach was closed by Lembert sutures. The serous surface over the fistulous tracks was brought together by the same method. The abdomen thoroughly washed out with sterilized water, a rubber tube put in and wound closed. Patient died three hours after operation.

At the post-mortem fourteen hours after death, the upper third of left kidney was found to contain a large abscess which, however, did not connect with the pelvis of the kidney, nor with the ureter, as neither contained pus.

CASE IX.—TYPHLITIS; GANGRENE OF CÆCUM; ARTIFICIAL ANUS; DEATH.—Louis T., Italian, laborer, æt. 37 years, admitted August 13, 1888. Was never sick until this attack. Had been a steady drinker for a number of years. Hygienic surroundings poor. Present illness commenced three weeks before admission, with headache, general malaise, frequent chilly sensations, loss of appetite, and pain in epigastrium. Two weeks ago pain increased in severity, and diarrhœa set in, which soon developed into acute dysentery. He had taken quinine and drastic purgatives.

The symptoms did not differ from those of an ordinary case of acute dysentery, and was considered such until the 20th, one week after admission, when he complained of severe pain in right iliac region, examination of which revealed dulness and great pain on percussion also marked fulness, though no well defined tumor. Examination, per rectum gave no evidence further than a ragged ulcer, which could just be touched with the tip of the fingers. His pulse was 120, temperature 102°F. I cut down upon cæcum and found a gangrenous spot about two inches in diameter, situated on anterior surface, and very close to ileo-cæcal junction. The appendix was not involved. If obstruction existed I could not find it, nor could I account for the gangrene, possibly it may have been due to dysenteric ulceration, though I am not aware that such ulceration has ever been followed by gangrene.

As it was thought I could not excise the diseased part and close the gut without too much narrowing, I concluded to make an artificial

anus, which I did by excising the gangrenous part, and sewing the opening to the abdominal wall. Patient did not rally and died eight hours after operation.

Post-mortem ten hours after death showed colon, from cæcum to rectum, studded with many ragged, irregular, dysenteric ulcers. This operation was done too late, but there was nothing to call special attention to the cæcum till time of operation.

CASE X.—PENETRATING STABWOUND OF ABDOMEN; INJURY OF SMALL INTESTINE; INTESTINAL SUTURE; DEATH.—Richard J., colored, æt. 69, laundryman, admitted April 28, 1888. Wound inflicted three hours previously. It was three inches below umbilicus, and three inches to right of median line. Patient was in fair condition, except that he was suffering excruciating pain. Two inches of slightly discolored omentum was protruding from wound, which was covered with clotted blood.

After thoro ugh antisepsis a median incision was made from umbilicus to two inches from symphysis pubis. Three small holes were found in small intestines, very close together, which were closed by Lembert's sutures. A large amount of blood was found in cavity, which was thoroughly cleansed and closed; glass drainage tube left in. Patient did well for twenty-four hours, when vomiting, hiccough, etc., supervened. He died thirty-one hours after operation. He was a frail, white-haired old man.

CASE XI.—PENETRATING STABWOUND OF ABDOMEN; RECOVERY.—John D., Amer., æt. 26, laborer, admitted July 31, 1888. Injury received two hours before admission. Wound in right axillary line two and a half inches above anterior superior spine of ilium. As there was considerable hemorrhage, I enlarged wound, sponged out the blood and irrigated cavity with warm sterilized water. Senn's hydrogen test was applied, but gave negative results. Wound sewed up, glass drainage tube left in.

Patient stood the operation well. Next morning temperature was 104° F., pulse, 100; wound was redressed; dressing found to be full of sanguinolent fluid. Tube taken out and absorbent gauze applied. He was given a large dose of salts. After this he made a rapid recovery. Wound healed by first intention.

CASE XII.—PENETRATING STABWOUND OF ABDOMEN; RECOVERY.—Louis P., colored, æt. 22, laborer, admitted April 27, 1888. One hour previously received a stabwound which penetrated the abdominal cavity on right side, at a point midway between umbilicus and anterior superior spine of ilium. His pulse was but little elevated; temperature 99.5° F. Patient was very drunk and boisterous.

Median incision from umbilicus to three inches below. Intestines were not injured, but little blood in abdomen, which was thoroughly cleansed and closed. No drainage tube used. Patient did badly after operation for several days, after which he slowly convalesced, and was discharged well May 29, 1888. Wound healed by first intention.

CSAE XIII.—PENETRATING STABWOUND OF ABDOMEN; DEATH.—Wm. P., colored, æt 24, laborer, admitted June 3, 1887. Four hours before admission was stabbed with a small knife, he being drunk at the time of injury. Walked several blocks to a physician's office, who applied a bandage and sent him to the dispensary, from whence he was sent to the hospital.

Was suffering from shock and intense pain at the site of wound, which was half an inch in length, and was situated one inch to the right of umbilicus; omentum protruded from wound. I enlarged the wound to three inches. Small quantity of blood removed from cavity, no visceral injury; wound was closed. Patient did badly and died thirty-six hours after operation, having never recovered from the shock following the injury.

CASE XIV.—STRICTURE OF DUCTUS COMMUNIS CHOLEDOCHUS; CHOLECYSTOTOMY; DEATH.—Joseph G., German, æt. 45, laborer, admitted July 5, 1888. Patient had been a hard drinker for years. Had suffered for many months with pain and swelling in right hypochondriac region. He was extremely jaundiced and emaciated. Pulse, 48; temperature subnormal; inclined to great stupor; could be aroused with difficulty.

Examination revealed a large, movable, fluctuating tumor two inches to the right of median line, and extending from border of liver to a point three inches below umbilicus. Distended gall-bladder was diagnosticated.

I made an incision, four inches in length, over the tumor parallel to the median line. A large white glistening gall-bladder came into view. After removing it from the abdominal cavity. an incision brought away a pint and a half (750 c.c.), by actual measurement, of slightly gelatinous, colorless fluid. After diligent search we were unable to find the cause of the obstruction. The bladder was sewed to the abdominal wall, making a biliary fistula. Patient was almost moribund when put on the table, and should not have been operated upon. It was done as a *dernier ressort*. The result, however, should not militate against the operation of cholecystotomy.

Autopsy one hour after death showed common gall duct very much dilated throughout, up to within an inch and a half of the

duodenum. At this point was found a circular cartilaginous ring, or stricture, which completely occluded the lumen of the duct, which accounted for the obstruction. The stricture was caused by inflammatory action, probably an enteritis traveling up the duct. The large amount of fluid in the gall-bladder was remarkable; however, very much larger quantities have been removed, in fact, many quarts, if we may believe the cases reported.

The two following cases were operated upon after the meeting of the Mississippi Valley Medical Society at which the preceding cases were reported:

CASE XV.—STRANGULATED INGUINAL HERNIA; RECOVERY.—J. M., colored, æt. 25, laborer, admitted October 2, 1888. Had always been healthy until four weeks before admission, at which time he had intermittent fever, quotidian type, which lasted two or three weeks.

Five days before admission had paroxysmal pains in the region of the umbilicus which came on suddenly and after a day or two became continuous, darting down into the left iliac fossa. His bowels had not moved for five days; he vomited a great deal during that time.

When admitted, complained of great pain in abdomen; belly tympanitic, great tenderness on pressure over the entire abdomen, more marked in left inguinal region. He vomited very often; ejecta had the odor of rotten meat, and was very suggestive of feces. Temperature but slightly elevated, pulse 90 and weak, respiration 36 and shallow.

A slight elevation was observed in left inguinal region, but not sufficient to enable us to feel a hernial protrusion. I, however, gave that diagnosis, and proceeded to perform laparotomy. Incision from umbilicus to four inches below. Passed hand to left inguinal region and removed from intestinal ring about half an inch of intestine, which was quite firmly adherent. The hernia was of the Littre variety, only one wall of the small intestine being involved. The invaginated portion was discolored, but not gangrenous. Intestines above the hernia were quite red and contained numerous lymph flocculi. Several feet of the intestine, together with the omentum, escaped from cavity, and as they were greatly distended, were put back with difficulty. There was a large quantity of serum in the abdominal cavity, which was mopped out with sponges wrung out in a weak solution of bichloride of mercury. Glass drainage tube left in lower angle of wound. Wound closed by interrupted heavy silk sutures, involving the skin, muscles and peritoneum. Wound dressed antiseptically.

Patient's temperature never exceeded 100° F. Several tablespoonfuls of serum were removed daily from tube. He was operated on a few hours after admission, and to this, as much as anything else, I attribute the successful result. The tube was removed on the fourth day. Bowels did not move until the fourth day, when he had several large actions. He was given a large dose of salts twenty-four hours after operation which did not act, but gave him very great pain. I was afraid to repeat the experiment, and as he did so well, I did not deem it advisable.

Wound healed by first intention. Patient is now well.

CASE XVI.—CHOLECYSTOTOMY—RECOVERY.—L. K., Austrian, æt. 34, gardener, admitted September 21, 1888. Health was always good until recently; had had intermittent fever for several months; has been a hard drinker for some years; also uses tobacco to excess.

Present illness commenced six days before admission with great pain in hepatic region. Three hours after admission he was suddenly seized with a stabbing pain in the hepatic region. Vomited frequently a green colored liquid. The pain was intense; could not bear the least pressure over right hypochondrium. He was very greatly jaundiced. Pulse and respiration accelerated. Temperature, 99.5° F.; thirst excessive; bowels loose Percussion gave increased area of dulness over gall-bladder.

On Sept. 23, two days after commencement of the pain I performed cholecystotomy. Incision four inches in length, two inches to the right and parallel to the linea alba. The gall-bladder was very greatly distended, very tense, and was of a livid color. The entire posterior portion was firmly adherent to the subjacent tissues. These adhesions were broken up, and an unsuccessful attempt made to find gall-stones, or the cause of the obstruction. It was deemed best to sew the gall-bladder to the upper angle of the wound, which I did by taking several stitches involving the serous and muscular coats, and attaching them to the abdominal wall. The broken up adhesions bled freely. This was packed with antiseptic gauze, the ends of which protruded from the wound.

On the second day the adhesion of the gall-bladder to wound being sufficiently firm, I incised it, letting out about two ounces of very thick, black, inspissated gall. Neither the fingers nor the probe could discover the cause of the obstruction. I believe that there was acute inflammation of the gall-bladder, closing the ducts, and to this I attribute the obstruction. The gall-bladder was washed out with a hot weak bichloride solution. On the second day the gall assumed its normal appearance and flowed very freely.

At present, three months after the operation, his color is normal, appetite good, bowels regular.

The fistulous opening in gall-bladder closed on the twenty-seventh day, two days after which the feces assumed a normal color.

This list includes sixteen cases of laparotomy done by me to date—seven deaths and nine recoveries. If to these be added a successful case of gunshot wound of the stomach and liver, reported to the Missouri State Medical Society in April last, and published in the ANNALS OF SURGERY for August, and an unsuccessful case for perforative peritonitis following syphilitic ulceration of descending colon, reported to the St. Louis Medical Society last winter, my list will comprise eighteen cases—eight deaths and ten recoveries.

REPORT ON THE TREATMENT OF CLUB-FOOT BY MEANS OF THE THOMAS WRENCH.[1]

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I DESIRE simply to report some cases with presentation of the apparatus employed, which is known as the Thomas Wrench, for forcibly correcting club-foot at one sitting, or if that is not necessary, take other sittings. The apparatus consists (see Fig. 1) simply of a modified monkey-wrench on a large scale, with arms jutting out from the side, which arms are controlled by a screw, and which take hold on the foot over the astragalus at one point, and in the plantar arch at the other point of pressure. The foot is placed in the wrench and the screw tightened, then the arms brought in close proximity until we get a good purchase or grip, then by means of the lever you can bring an ordinary club-foot, or the kind of

[1]Read before the American Orthopedic Association in Washington, September 1888.